COOLIDGE
MUNICIPAL AIRPORT

Chapter Three
FACILITY NEEDS EVALUATION

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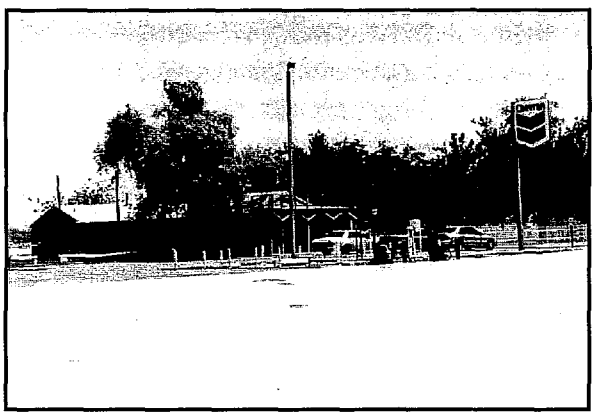
FACILITY NEEDS EVALUATION

COOLIDGE MUNICIPAL AIRPORT



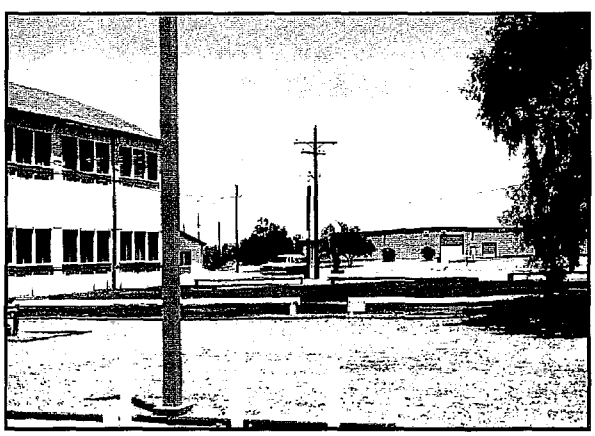
In the previous chapter, forecasts of aviation demand were presented for Coolidge Municipal Airport through the year 2015. These forecasts included based aircraft, based aircraft fleet mix, annual operations, and peaking characteristics. With this information, the specific components of the airport system (airfield, terminal area, ground access, and airport services) must be evaluated for their capability in accommodating the forecast aviation demand.

In this chapter, existing components of the airport and their individual capacities are identified and described. These capacities have been compared to forecast demand levels to determine where deficiencies in airport facilities exist or are expected to materialize. Once deficiencies in airport facilities are identified, a more specific determination of the approximate sizing and timing of the new facilities can be made. Therefore, the requirements for new facilities are presented for the short, intermediate, and long term planning horizons. An analysis of the overall facility needs is described in the airside and landside sections of this chapter.

After identifying these facility requirements, alternatives for providing the facilities will be evaluated (in Chapter 4). The alternatives evaluation will help determine the most functional and efficient means for implementing further development of the facility.

AIRFIELD REQUIREMENTS

Airfield requirements include the need for facilities related to the arrival, departure, and ground movement of aircraft. The following facilities are associated with the airfield:



- Runways
- Taxiways
- Navigational Aids
- Airfield Lighting and Marking

The Federal Aviation Administration (FAA) has established criteria for use in determining the appropriate size and design of airfield facilities. The selection of appropriate FAA design standards for the development of airfield facilities is based primarily upon the characteristics of the aircraft which are expected to use the airport. Planning for the design requirements of future aircraft use is particularly important because the incorrect sizing of airfield facilities could be extremely costly to modify at a later date.

The most important characteristics in airfield planning are the approach speed and wingspan of the critical design aircraft anticipated to use the airport now or in the future. An aircraft's approach speed is based upon 1.3 times its stall speed in the landing configuration at the particular aircraft's maximum certified weight. The five approach categories used in airport planning are as follows:

Category A: Speed less than 91 knots.

Category B: Speed 91 knots or more, but less than 121 knots.

Category C: Speed 121 knots or more, but less than 141 knots.

Category D: Speed 141 knots or more, but less than 166 knots.

Category E: Speed 166 knots or more.

The second basic design criteria relates to the size of an airplane. The airplane design group (ADG) is based upon wingspan. The six groups are as follows:

Group I: Up to but not including 49 feet.

Group II: 49 feet up to but not including 79 feet.

Group III: 79 feet up to but not including 118 feet.

Group IV: 118 feet up to but not including 171 feet.

Group V: 171 feet up to but not including 214 feet.

Group VI: 214 feet up to but not including 262 feet.

FAA AC 150/5300-13, Airport Design, identifies a coding system which is used to relate airport design criteria to the operational and physical characteristics of the airplanes intended to operate at the airport. This code, called the Airport Reference Code (ARC), has two components: the first component, depicted by letter, is the aircraft approach category defined above (operational characteristic); the second component, depicted by a Roman numeral, is the airplane design group also defined above (physical characteristic). To determine facility requirements, the Airport Reference Code (ARC) should first be determined, and then related to airport design criteria as contained within *AC 150/5300-13, Airport Design.*

Common piston engine, turboprop, and business jet aircraft, as well as their approach speed, wingspan, maximum takeoff weight, and ARC are summarized in **Table 3A.** The Coolidge Municipal Airport is currently utilized by all types of general aviation aircraft ranging from small single-engine piston aircraft to turboprop and business jet aircraft. Turboprop and business jet aircraft are the most demanding aircraft to operate at the airport, however, their present use of the airport is occasional and does not comprise at least 500 annual operations (500 annual operations is used by the FAA to define the critical design aircraft). Therefore, the current critical design aircraft are aircraft within ARC B-I.

Increased commercial and industrial development in the Coolidge area and in central Pinal County will promote increased business use of the airport. Therefore, it can be expected in the future that business turboprop and turbojet aircraft use of the airport will increase. Therefore, airfield planning should include these aircraft. Common turboprop and business jets fall within ARC C-II.

As the primary runway, Runway 5-23, should be designed to accommodate the most demanding aircraft. Therefore, Runway 5-23 should be designed to accommodate common turboprop and business jets which fall within ARC C-II. Presently, Runway 17-35 is constructed to accommodate small aircraft within the B-II ARC. As a secondary runway (serving mostly small piston engine aircraft during crosswind situations) a B-II ARC is sufficient.

RUNWAYS

The adequacy of the existing runway system was analyzed from a number of perspectives including airfield capacity, runway orientation, runway length, runway width, and pavement strength. From this information, requirements for runway improvements were determined for the airport.

Airfield Capacity

A demand/capacity analysis measures the capacity of the airfield facilities (i.e., runways and taxiways) in order to identify a plan for additional development needs. The capacity of the airfield is affected by several factors including airfield layout, meteorological conditions, aircraft mix, runway use, aircraft arrivals, aircraft touch-and-go activity, and exit taxiway locations. An airport's airfield capacity is expressed in terms of its annual service volume. Annual service volume is a reasonable estimate of the maximum level of aircraft operations that can be accommodated in a year.

The capacity of the airport's runway system to meet future operational demand can be determined without detailed analysis. Pursuant to FAA guidelines detailed in the *FAA Advisory Circular 150/5060-5, Airport Capacity and Delay*, the annual service volume of a runway configuration similar to the airport's runway configuration normally exceeds 230,000 operations. Since the forecasts for the airport indicate that the activity throughout the planning period will remain well below 230,000 annual operations, the

TABLE 3A
Representative General Aviation Aircraft by Airport Reference Code
Coolidge Municipal Airport

Airport Reference Code	Typical Aircraft	Approach Speed (knots)	Wingspan (feet)	Maximum Takeoff Weight (lbs.)
	Single-Engine Piston			
A-I	Cessna 150	55	32.7	1,600
A-I	Cessna 172	64	35.8	2,300
A-I	Beechcraft Bonanza	75	37.8	3,850
	Multi-Engine Piston			
B-I	Beechcraft Baron 58	96	37.8	5,500
B-I	Cessna 402	95	39.8	6,300
B-I	Piper Navajo	100	40.7	6,200
B-I	Cessna 421	96	41.7	7,450
	Turboprop			
B-I	Mitsubishi MU-2	119	39.2	10,800
B-I	Piper Cheyenne	119	47.7	12,050
B-I	Beechcraft King Air B-100	111	45.8	11,800
	Business Jets			
B-I	Cessna Citation 525	108	47.1	11,850
B-I	Cessna Citation I	108	47.1	11,850
B-I	Falcon 10	104	42.9	18,740
	Turboprop			
B-II	Beechcraft Super King Air	103	54.5	12,500
B-II	Cessna 441	100	49.3	9,925
	Business Jets			
B-II	Cessna Citation II	108	51.7	13,330
B-II	Cessna Citation III	114	53.5	22,000
B-II	Falcon 20	107	53.5	28,660
B-II	Falcon 900	100	63.4	45,500
	Business Jets			
C-I	HFB-320 Hansa	125	47.5	20,280
C-I	Learjet 55	128	43.7	21,500
C-I	Westwind	127	44.8	23,300
C-I	Rockwell Sabre 75A	137	44.5	23,300
C-I	Learjet 25	137	35.6	15,000
	Turboprop			
C-II	Rockwell 980	121	52.1	10,325
	Business Jets			
C-II	Canadair Challenger	125	61.8	41,250
C-II	Gulfstream III	136	77.8	68,700
C-II	Bae 800	125	51.4	23,350
	Business Jets			
D-I	Learjet 35	143	39.5	18,300
D-II	Gulfstream II	141	68.8	65,300
D-II	Gulfstream IV	145	78.8	71,780

capacity of the existing airfield system will not be reached, and the airfield can meet operational demands. Therefore, the facility requirements analysis will concentrate on developing the appropriate facilities to improve safety and service considerations rather than demand variations.

Runway Orientation

The present runway system at the airport includes Runway 5-23, oriented in a northeast-southwest direction, and Runway 17-35, oriented in a north-south direction. For the operational safety and efficiency of an airport, it is desirable for the principal runway of an airport's runway system to be oriented as close as possible to the direction of the prevailing wind. This reduces the impact of wind components perpendicular to the direction of travel of an aircraft that is landing or taking off (defined as a crosswind).

The FAA recommends planning for additional runway orientations when the primary runway orientation provides less than 95 percent wind coverage for any aircraft forecast to use the airport on a regular basis. For planning and design, a crosswind component is considered excessive at 10.5 knots (12 mph) for ARC's A-I and B-I; 13 knots (15 mph) for ARC's A-II and B-II. **Table 3B** summarizes wind coverage for the Coolidge Municipal Airport.

TABLE 3B
Wind Coverage Summary
Coolidge Municipal Airport

	All-Weather		
Wind Speed	**Runway 5-23**	**Runway 17-35**	**Combined Coverage**
10.5 knots	90.8%	92.9%	96.1%
13.0 knots	92.0%	95.2%	97.8%

Source: Coolidge Municipal Airport, 2-2-84 to 11-19-84

Wind data is not regularly collected at the airport; however, for a 10 month period in 1984 wind data was collected at the airport. According to the data collected at the airport, the primary runway (Runway 5-23) provides less than 95 percent wind coverage for 10.5 and 13.0 knot crosswind components. Therefore, an additional runway (Runway 17-35) is needed to meet the FAA minimum wind coverage requirement. While Runway 17-35 is needed to provide an alternate landing area for smaller aircraft during strong crosswind conditions, this runway also enhances airfield capacity and provides an alternate landing area for situations when the primary runway is closed.

Runway Length

The determination of runway length requirements for an airport are based on five primary factors: airport elevation; mean maximum temperature of the hottest month; runway gradient; critical aircraft type expected to use

the airport, and stage length of the longest nonstop trip destinations. An analysis of the existing and future fleet mix indicates that business jets will be the critical aircraft for planning runway length at Coolidge Municipal Airport. Typical business aircraft range from the Cessna Citation I, with less demanding runway length requirements, to the Learjet and Gulfstream models, requiring longer runway lengths. The mean maximum temperature of the hottest month is 107 degrees Fahrenheit. The airport's elevation is 1,574 feet above sea level, and the gradient (difference in elevation of each runway end) for the primary runway, Runway 5-23, is 0.44 percent.

Using this data, **Table 3C** outlines the runway length requirements for the various classifications of aircraft that may operate at the airport. (These design lengths were derived from the FAA Airport Design computer program Version 4.2A.) The small aircraft classification includes aircraft below 12,500 pounds. The large airplane classification includes all aircraft between 12,500 pounds and 60,000 pounds.

TABLE 3C
Runway Length Requirements
Coolidge Municipal Airport

RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN	
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	3,200 feet
95 percent of these small airplanes	3,900 feet
100 percent of these small airplanes	4,500 feet
Small airplanes with 10 or more passenger seats	4,900 feet
Large airplanes between 12,500 and 60,000 pounds	
75 percent of these large aircraft at 60 percent useful load	5,550 feet
100 percent of large aircraft at 60 percent useful load	7,440 feet

Source: FAA Airport Design computer program Version 4.2A.

As the primary runway at the airport, Runway 5-23 must be designed to accommodate the runway length requirements of business jets, the most demanding aircraft to operate at the airport. As indicated in the table, at its present length of 5,547 feet Runway 5-23 can accommodate 75 percent of large airplane operations at 60 percent useful load (passengers and fuel) in both wet and dry runway conditions.

While this length falls short of accommodating all business jets in the national fleet (refer to 100 percent of large airplanes at 60 percent useful load), Runway 5-23 can accommodate the majority of common business jets found in the national fleet. Based upon the loading assumptions provided in the runway length calculation, these aircraft can reach many of the large regional metropolitan areas from the airport. At its present length, Runway 5-23 does not significantly restrict business jet operations; in fact, many business jets operations can be fully accommodated at the airport. At this

length, only a small number of business jet flights to distant markets will be limited on the hottest days of the year. Therefore, the airport is capable of accommodating the majority of business jet operations which will enhance the airport's role in supporting business and industrial growth in the City of Coolidge.

Runway 17-35 is designed to serve the needs of small single and multi-engine aircraft. In this manner, it provides improved airfield capacity and safety by providing a runway orientation that reduces strong crosswind landings. At its present length of 3,870 feet, Runway 17-35 can accommodate 95 percent of small airplanes. This includes all single engine aircraft and nearly all multi-engine aircraft currently in the national fleet. Therefore, its present length is sufficient to accommodate the needs of small aircraft.

Runway Width

Runway width is determined by the ARC selected for each runway. As previously discussed, the ARC for Runway 5-23 is C-II and the ARC for Runway 17-35 is B-II. According to FAA design standards, the runway width for an ARC of C-II is 100 feet. Currently, Runway 5-23 is 150 feet wide, exceeding FAA design standards. According to FAA design standards, the runway width for an ARC of B-II is 75 feet. Currently, Runway 17-35 is 75 feet wide.

Pavement Strength

The most important feature of airfield pavement is its ability to withstand repeated use by aircraft of significant weight. The current strength rating on Runway 5-23 is 80,000 pounds single wheel loading, 115,000 pounds dual wheel loading, and 210,000 pounds dual-tandem wheel loading. These strength ratings are sufficient to accommodate all common turboprop and business jet aircraft in the national fleet and is sufficient for the C-II ARC design code. The current strength rating on Runway 17-35 is 17,000 pounds single wheel loading. This strength rating is sufficient for aircraft within the B-II ARC which includes most small general aviation aircraft.

TAXIWAYS

Taxiways are primarily constructed to facilitate aircraft movements to and from the runway system. Parallel taxiways enhance airfield capacity and are essential to aircraft movement about an airfield. Exit taxiways reduce the amount of time that an aircraft occupies the runway.

While there is not a full-length parallel taxiway to either runway, there is taxiway access to the Runway 5, 23, and 17 ends. Taxiway access is not available to the Runway 35 end. Aircraft must back-taxi along Runway 17-35 to access the runway 35 end. (A portion of Taxiway 1 and Taxiway 2, which previously provided access to the

Runway 35 end, have been closed due to deteriorated pavement.) There are three exits along Runway 5-23: one at each runway end and one at the Runway 17-35 / Runway 5-23 intersection. There are three exits along Runway 17-35 as well: one at each runway end and at the midpoint intersection with Taxiway 3. The number of exit taxiways along each runway is sufficient.

The two most critical design considerations for taxiways are the width and runway centerline to taxiway centerline separation distance. These design standards are based on the ARC for the particular runway. For Runway 5-23, C-II ARC design standards require a taxiway width of 35 feet and a runway centerline to taxiway centerline separation distance of 300 feet. For Runway 17-35, B-II ARC design standards require a taxiway width of 35 feet and a runway centerline to taxiway centerline separation distance of 240 feet. Taxiway 6 lies parallel to Runway 5-23 and Taxiway 1 lies parallel to Runway 17-35. Each taxiway is separated from the runway by 525 feet, exceeding FAA design standards. Each taxiway at the airport is currently 50 feet wide, exceeding FAA design standards.

NAVIGATIONAL AIDS

Electronic navigational aids are used by aircraft during an approach to the airport. Such facilities are vital to the success of the airport, and provide additional safety to passengers using the air transportation system and enhance the capacity and safety of the airfield. While instrument approach aids are especially helpful during poor weather, they are often used by pilots when visibility is good.

Advances in airplane navigational equipment technology and pilot training makes it possible for virtually every properly equipped general aviation aircraft to conduct operations during reduced visibility and cloud ceiling situations. In addition, the increased use of general aviation aircraft for business and corporate uses has advanced the need for better approaches at non-commercial airports so that business travelers can maintain their schedules. With the need for the airport to support and enhance business and industrial growth in the City of Coolidge, it is important that the airport is accessible during all weather conditions and the amount of time that the airport is inaccessible due to inclement weather is reduced. The current VOR/DME and GPS approaches provide this capability for the airport, however, the current instrument approaches are limited to aircraft with approach speeds less than 120 knots (Approach Categories A and B). Many business jet aircraft fall within Approach Categories C and D and have approach speeds greater than 120 knots. Therefore, during situations when weather conditions deteriorate to a point where visual flight can no longer be conducted, the airport is inaccessible to aircraft within these Approach Categories. An update of the official Airport Layout Plan that references aircraft within Approach Categories C and D is required before the FAA will publish approach minimums for aircraft within these Approach Categories.

All existing VOR and DME facilities are expected to be replaced with GPS by 2010. The existing Runway 5 VOR/ DME approach should ultimately be replaced by GPS.

AIRFIELD LIGHTING AND MARKING

Currently, there are a number of lighting and pavement markings aids serving pilots and aircraft using the Coolidge Municipal Airport. These lighting and marking aids assist pilots in locating the airport during night or inclement weather conditions, as well as assist in the ground movement of aircraft. The current and future lighting and marking requirements for the airport are summarized below.

Identification Lighting

The airport is equipped with a rotating beacon to assist pilots in locating the airport at night and a lighted wind cone which provides pilots with information about wind conditions. Each of the facilities is adequate and should be maintained in the future.

Pavement Edge Lighting

Currently, only Runway 5-23 and Taxiways 4 and 6 are equipped with medium intensity pavement edge lighting. Runway 17-35 and Taxiways 1, 3, and 5 are without pavement edge lighting.

Pavement edge lighting would enhance the safety of operations along Taxiways 3 and 5 which lead to the Runway 5 threshold as well as accommodate aircraft operations on Runway 17-35 and along Taxiway 1 which lies along the western edge of the aircraft parking apron. Therefore, facility planning should include installing medium intensity pavement edge lighting along Runway 17-35 and Taxiways 1, 3, and 5. While pavement edge lighting is not provided along the apron, the existing street-lamp style apron lighting is sufficient.

Visual Approach Lighting

Visual glide slope indicators (VGSI) are a system of lights located at the side of the runway which provide visual descent guidance information to pilots during an approach to the runway. Runways 5 and 23 are equipped with a type of VGSI known as a visual approach slope indicator (VASI) which are currently inoperable. In most instances, the landing phase of flights to the airport will be conducted in visual conditions. To assist pilots in determining the correct descent path to the runway threshold, facility planning should include installing VGSI's to Runways 17 and 35 and either repairing or replacing the VASI's currently installed to the Runway 5 and 23 ends.

Runway End Identification Lighting

Runway identification lighting provides the pilot with a rapid and positive identification of the runway end. The most basic system involves runway end identifier lights (REIL's). REIL's are normally installed to runways not equipped with a more sophisticated approach light system. REIL's can aid

pilots in locating the runway threshold at night and during poor weather conditions and enhance the safety of operations at the airport. Therefore, facility planning should include installing REIL's to each end of Runway 5-23.

Pavement Markings

Currently, Runway 5-23 is equipped with visual runway markings that identify the runway centerline, touchdown zone, designation, aircraft holding positions, and pavement edge. The existing GPS and VOR/DME approaches require non-precision markings. These markings should be upgraded when Runway 5-23 is rehabilitated. Runway 17-35 is equipped with visual runway markings that identify the runway centerline, designation, and aircraft holding positions. These markings are sufficient and should be maintained through the planning period. Currently, these markings are faded. These markings will be repainted when Runway 17-35 is rehabilitated. (The City of Coolidge has an ADOT Grant for the rehabilitation of Runways 5-23 and 17-35.)

LANDSIDE REQUIREMENTS

Landside facilities are those necessary for handling of aircraft and passengers while on the ground. These facilities provide the essential interface between the air and ground transportation modes. The capacities of the various components of each area were examined in relation to projected demand to identify future landside facility needs.

AIRCRAFT STORAGE HANGARS

The space required for hangar facilities is dependent upon the number and type of aircraft expected to be based at the airport. Weather extremes at the airport can be severe at times and therefore will play a role in the decision to hangar an aircraft. Generally, however, most aircraft owners prefer to hangar their aircraft as opposed to tying them down outside. Currently, there are no T-hangar facilities at the airport with one large conventional hangar utilized by the fixed base operator for aircraft storage. T-hangars provide the aircraft owner more privacy and greater ease in obtaining access to aircraft than do conventional hangars. The principal uses of conventional hangars at general aviation airports are for large aircraft storage, storage during maintenance, and for housing fixed base operator activities. Future hangar requirements were determined based upon an assumption that a majority of aircraft owners would prefer enclosed T-hangar storage and that business and corporate users would utilize conventional hangar space.

Table 3D estimates future hangar requirements for the airport. A planning standard of 1,200 square feet per based aircraft stored in T-hangars and 2,500 square feet for aircraft stored in conventional hangar area was used to determine total hangar area requirements.

AIRCRAFT PARKING APRON

A parking apron should be provided for at least the number of locally-based aircraft that are not stored in hangars, as well as transient aircraft. Although the majority of future based aircraft were assumed to be stored in an enclosed hangar, a number of aircraft will require outside tiedown space as these aircraft will be used continually throughout the day for training or skydiving activities.

The existing apron totals approximately 50,000 square yards. Total apron area requirements were determined by providing 360 square yards for each transient and locally-based aircraft parking position required. The results of this analysis are presented in **Table 3E.** As indicated in the table, the existing apron is sufficient for the expected number of transient and locally-based aircraft at the airport.

TABLE 3D
Aircraft Storage Hangar Requirements
Coolidge Municipal Airport

	Available	Current Requirements	Short Term	Intermediate Term	Long Term
Aircraft to be Hangared		1	7	12	20
T-Hangar Positions	0	0	4	8	12
Conventional Hangar Positions	4-9	1	3	4	8
Conventional Hangar Area (s.f.)	11,700	2,500	7,500	10,000	20,000
T-Hangar Area (s.f.)	0	0	4,800	9,600	14,400
Total Hangar Area (s.f.)	11,700	2,500	12,300	19,600	34,400

TABLE 3E
Apron Requirements
Coolidge Municipal Airport

	Available	Current Requirements	Short Term	Intermediate Term	Long Term
Transient Apron Positions		6	8	9	12
Locally-Based Aircraft Positions		0	2	4	5
Total Positions	Approx. 40	6	10	13	17
Total Apron Area (s.y.)	50,000	2,200	3,600	4,700	6,100

TERMINAL FACILITIES

General aviation terminal facilities include vehicle parking areas and actual terminal building space. Terminal building space is required for waiting passengers, pilot's lounge and flight planning, concessions, management, storage and various other needs. This space is not necessarily limited to a single, separate terminal building but also includes the space offered by fixed base operators for these functions and services.

Currently, terminal services are concentrated in two separate buildings. Public restroom facilities are available in the large conventional hangar. FBO services such as pilots' supplies and fueling are provided from the administration/FBO building located adjacent to the large conventional hangar. Automobile parking is available in an unpaved area located east of the large conventional hangar. While the boundaries of this area are not clearly defined, there is approximately 16,800 square feet of area available for vehicle parking. Assuming a planning requirement of 400 square feet per vehicle, there is sufficient area for approximately 42 vehicles.

The methodology used in estimating general aviation terminal facility needs was based on the number of airport users expected to utilize general aviation facilities during the design hour. Future space requirements were then based upon providing 90 square feet per design hour itinerant passenger. Vehicle parking demands were calculated by multiplying design hour itinerant passengers by an industry standard of 1.3. **Table 3F** outlines requirements for general aviation terminal services at the airport through the planning period.

TABLE 3F
General Aviation Terminal Requirements
Coolidge Municipal Airport

	Currently Available	Current Requirement	Short Term	Intermediate Term	Long Term
Design Hour Passengers		11	13	13	18
Building Space (s.f.)	---	990	1,170	1,170	1,620
Auto Parking Spaces	Approx. 42	14	17	17	23
Auto Parking Area (s.f.)	Approx. 16,000	5,600	6,800	6,800	9,200

FUEL FACILITIES

Fuel storage capability at the airport includes two 10,000 gallon underground storage tanks installed in the early 1980's. These tanks are owned by the City of Coolidge and leased to the fixed base operator. While the existing fuel storage capability is sufficient for existing and future levels

of activity, these tanks were manufactured and installed prior to 1988 when new federal regulations regarding underground fuel storage were enacted. These regulations initially applied to new tank construction and installation after 1988; however, all underground storage tanks are required to meet the 1988 standards by December 22, 1998. Therefore, the City of Coolidge should complete a needs assessment to determine what is needed to meet the regulatory requirements with the existing underground storage tanks. Should it be infeasible to meet these federal requirements with the existing fuel storage tanks, the alternatives analysis will examine the various alternatives available for fuel storage at the airport.

SUMMARY

The intent of this chapter has been to outline the facilities required to meet aviation demands projected for Coolidge Municipal Airport through the year 2015. A summary of the airside and landside facility requirements is presented on **Exhibit 3A.** The next step in the master planning process is to analyze alternatives that can accommodate these requirements. The following chapter will provide this analysis and recommend the best alternative for future development of the airport.

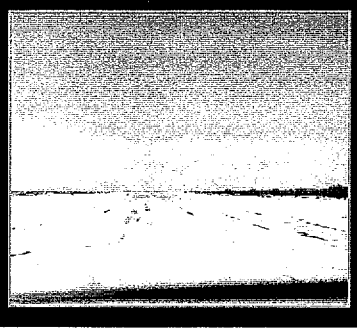
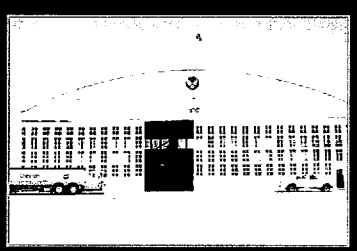
	CURRENTLY AVAILABLE	SHORT-TERM NEED (5 YEARS)	LONG-RANGE NEED (20 YEARS)
RUNWAYS & TAXIWAYS 	**Runway 5-23** 5,550' x 150' 210,000 lbs. DWL **Runway 17-35** 3,740' x 75' 17,000 lbs. SWL **Taxiways** 1, 3, 4, 5, 6	**Runway 5-23** Same **Runway 17-35** Same **Taxiways** Same	**Runway 5-23** Same **Runway 17-35** Same **Taxiways** Reconstruct Taxiway 2
NAVIGATIONAL AIDS & LIGHTING 	Rotating Beacon Medium-Intensity Pavement Edge Lighting Runway 5-23; Taxiways 4 and 6 VASI's (5-23)	Phase-in GPS Approaches Install Medium-Intensity Pavement Edge Lighting Runway 17-35; Taxiways 1. 3, 5 Repair/Replace VASI's (5-23)	Install VGSI (17-35) Install REIL's (5-23)
AIRCRAFT STORAGE & TIEDOWN 	**T-Hangars** Positions: 0 Area: 0 (s.f) **Conventional Hangars** Positions: 4-8 Area: 11,700 (s.f.) **Paved Tiedowns** Positions: 40 Area: 50,000 (s.f.)	**T-Hangars** Positions: 4 Area: 4,800 (s.f) **Conventional Hangars** Positions: 3 Area: 7,500 (s.f) **Paved Tiedowns** Positions: 10 Area: 3,600 (s.f)	**T-Hangars** Positions: 12 Area: 14,400 (s.f) **Conventional Hangars** Positions: 8 Area: 20,000 (s.f) **Paved Tiedowns** Positions: 17 Area: 6,100 (s.f)
TERMINAL SERVICES 	**Terminal Building Space** 2,200 (s.f.) **Automobile Parking** Spaces: Approx. 42	**Terminal Building Space** 1,170 (s.f.) **Automobile Parking** Spaces: 17	**Terminal Building Space** 1,620 (s.f.) **Automobile Parking** Spaces: 23

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Exhibit 3A
FACILITY REQUIREMENTS